first, a complex internal shell, divisible into the same principal parts as that of the *Sepia*, but one of which has, secondly, the same essential chambered structure as the shell of the *Spirula*; thirdly, uncinated cephalic arms, as in the *Onychoteuthis*; and lastly, an advanced position of rounded fins, as in the *Spirula* and *Rossia*.

The paper is illustrated by drawings of the specimens described, with microscopic views of the shell and muscular tissue, and a restoration of the Belemnite according to the data afforded by the present fossils.

April 18, 1844.

The MARQUIS OF NORTHAMPTON, President, in the Chair.

1. Note in addition to Mr. Gassiot's paper on the "Water Battery." The author here describes an instrument which he has recently constructed, and by means of which he is enabled with great facility, and without the aid of Zamboni's pile, to test the tension in a single series of the voltaic battery.

2. "On the production of Ozone by Chemical Means." By Professor Shoenbein, in a letter to Michael Faraday, Esq., D.C.L., F.R.S. Communicated by Dr. Faraday.

The author conceives that of the two gaseous principles which are simultaneously produced during the slow action of phosphorus upon atmospheric air, and which have opposite voltaic characters, that which exerts electro-positive properties is composed of vaporized phosphorus, conjoined with particles of phosphatic acid; and the other, which is electro-negative, is identical with *ozone*, or the odoriferous principle which is disengaged at the positive electrode during the electrolysis of water. His opinion is founded on the odour of the one not being distinguishable from that of the other.

3. "Contributions to Terrestrial Magnetism." No. VI. By Lieut.-Colonel Sabine, R.A., F.R.S.

This portion of the series consists of observations made on board Her Majesty's ships Erebus and Terror, from June 1841 to August 1842, in the Antarctic Expedition under the command of Captain Sir James Clark Ross, R.N., F.R.S. It comprises the result of the operations conducted during the second year of the expedition, when it proceeded early in July 1841, from Hobarton to Sydney, and thence to the Bay of Islands in New Zealand, remaining there till November, and reaching, in February 1842, in latitude 78°, the icy barrier which had stopped their progress in the preceding year. Quitting the antarctic circle in March, and keeping nearly in the 60th parallel, they crossed the whole breadth of the Southern Pacific Ocean to the Falkland Islands, where they arrived in April 1842.

On a general review of the magnetic declination in the southern

nemisphere, the phenomena are found to present the same obvious and decided features of a duplicate system as those of the northern. Particular attention is given to those lines traversed by the ship's course where the needle attains its maximum declination, whether easterly or westerly, as affording valuable data for the estimation of secular variations. The results obtained by the present expedition confirm the conclusion deducible from those of previous navigators; namely, that the spaces in the Southern Pacific, distinguished by certain magnetic characters, undergo a movement of translation, of which the general direction is from east to west; a direction which is the opposite to that in which a similar change takes place in the corresponding regions of the northern hemisphere; namely, in the Siberian quarter, where the secular movement is from west to east.

April 25, 1844.

The MARQUIS OF NORTHAMPTON, President, in the Chair.

1. "On the production of Ozone by Chemical Means." By C. F. Shoenbein, Professor of Chemistry at Basle, in a second letter to Michael Faraday, Esq., D.C.L., F.R.S. Communicated by Dr. Faraday.

The author adduces further evidence in support of the opinions he advanced in his former communication relative to the identity of the odoriferous principles which are disengaged during electric discharges in common air, during the electrolysis of water, and during the slow action of phosphorus upon atmospheric air. This principle, termed *Ozone*, he regards as being a simple body, and a constituent of azote, which he believes to be a compound of hydrogen and ozone; and he explains the disengagement of this latter element, which he considers as analogous in its chemical character to chlorine, by the partial decomposition of azote, in consequence of its hydrogen combining with oxygen, in the several processes above-mentioned during which ozone makes its appearance.

2. "On the existence of Phosphoric Acid in Rocks of igneous origin." By George Fownes, Esq., Ph. D., Chemical Lecturer in the Middlesex Hospital Medical School. Communicated by Thomas Graham, Esq., F.R.S.

The author has, by careful analysis, ascertained the presence of phosphoric acid in various rocks of igneous origin. Those which he examined were principally the following; namely, 1. The fine white porcelain clay of Dartmoor, resulting from the disintegration of the felspar of the granite of that district. 2. Dark grey vesicular lava from the Rhine, used at Cologne as a building-stone. 3. White trachyte from the Drachenfels, near Bonn. 4. Dark red, spongy, scoriaceous lava from Vesuvius. 5. Compact, dark green basalt, or toadstone from Cavedale, Derbyshire. 6. Dark blackish-green basalt from the neighbourhood of Dudley, termed